Power. Many power plants have been built over the years.

How Uganda's electricity sector has transformed

BY NELSON WESONGA
nwesonga@ug.nationmedia.com

Before the British Protectorate government created the Uganda Electricity Board (UEB) in 1948, power in Uganda was generated, transmitted and distributed by the East African Power & Lighting Company (EAP&L).

EAP&L, which operated in Uganda between 1938 and 1954, used diesel to produce power, according to the power sector reform and regulation in Africa report.

The company had generators in Entebbe, Uganda's administrative capital in the days of the protectorate government, and in Kampala.

In 1950, the government commissioned the building of the Owen Falls Dam hydropower plant.

Four years later, the plant's first two turbines, each with a capacity of 15 megawatts (MW), started spinning.

At the time, suppressed demand for electricity was very low.

According to the aforementioned report, between 1954 and 1968, eight more turbines, each with a generation capacity of 15MW, were commissioned.

So, as of 1968, Uganda had an installed hydropower generation capacity of 150MW.

At the time, this was sufficient to meet Uganda's demand and to provide a surplus for export.

However, by 1986, the generation capacity of the Owen Falls Dam had dropped from 150MW to 60MW.

The drop is partly due to the political instability in Uganda in the period between 1970 and 1986.

Between 1971 and 1986, there was less period maintenance of the equipment of the plant, which impacted on its efficiency.

When completed, Karuma hydropower dam will enable the country to generate more power.

FILE PHOTO

Wear and tear took its toll

Worse, there was not enough hard currency to spend on importing the worn-out parts of the power plant.

Later, as suppressed demand for electricity picked up, it outstripped generation. That necessitated power rationing.

In June 1999, the government released the Uganda Power Sector Restructuring and Privatisation: New Strategy Plan and Implementation Plan.

The objectives of the plan were to reduce energy losses, increase access to electricity, increase the collection rates and eliminate subsidies and, of course, to increase power generation capacity.

The government also intended to improve reliability and quality of supply of electricity, attract private capital into the Electricity Supply Industry.

The plan came on the heels of the government faulting UEB for high energy losses, low access to electricity, low collection rates, and reliance on the government for cash.

Low access to electricity was partly because UEB did not expand the transmission and distribution lines beyond a few towns.

As such, the prospective users of power in the areas that were not covered were not connected.

The few users who were connected had to either part with a lot of money to get the poles and cables to reach their areas or relied on godfathers to have UEB string power lines to their homes.

Low collections were majorly because many government ministries and departments often never paid their bills.

Where they paid, it was usually after many months.

Because these ministries were crucial to security or in the case of health the hospitals offering health services, UEB would seldom disconnect them.

UEB relied on the government to subsidise the cost of connecting prospects to electricity.

For instance, where one had to pay Shs366,000 in case of a no-pole service, UEB charged them just Shs80, 000.

And where one had to pay Shs1.1m for a one-pole service, UEB charged on Shs276, 000.

Without the subsidy, fewer people could have afforded the connection charges.

As part of the plans to restructure the sector, Uganda in November 1999 enacted the Electricity Act.

The Act created the Electricity Regulatory Authority (ERA), which would license power generation, transmission and distribution utilities; regulate the electricity sector and determine the retail tariffs.

UEB was split into three; Uganda Electricity Generation Company Limited (UEGCL), Uganda Electricity Transmission Company Ltd (UETCL) and Uganda Electricity Distribution Company Ltd (UEDCL).

UEGCL would later concession to Eskom Uganda Ltd the management of the Nalubaale and Kiira hydropower plants whereas UEDCL leased the distribution network to Umeme.

What has changed over the years?

Uganda's installed electricity generation capacity has increased from 180MW in 1986 to 873.9MW (2017).

Many power plants have been built over the years.

This has been possible because of the stable investment climate and the institution of standardised Power Purchase Agreements (PPAs). With the standardised PPAs, an investor gets to agree with UETCL on the costs to be invested and how they will be recovered and in what portions and over what period.

Though power generation capacity has increased, peak demand was as of 2017 just 600MW. That means there is a surplus of about 300MW.

With the commissioning of Isimba later this year, and of Karuma next year, another 783MW will be added to the grid.

With suppressed demand growing at a slower pace, Uganda will by 2020 have even more power than it can use – unless the government does something.

So far, it is encouraging foreigners to build factories in Uganda arguing that there is abundant power.

The government is also planning to export power to South Sudan and more to the Democratic Republic of the Congo.

To that effect, it has signed Memoranda of Understanding with both countries. With the Democratic Republic of the Congo, it has even conducted a feasibility study to establish the viability of the project and how much it will cost.

Regarding energy losses, they are now lower at 17.5 per cent.

What is not very clear is from what percentage.

According to power distributor Umeme's documents, when it took over the power distribution network in 2005, losses were at 38 per cent. However, according to the 2009 report on electricity tariff reduction also known as the General Saleh committee report , the chairman of the ERA board and the managing director of UEDCL have documented the loss figures at the concession having been between 27 per cent and 30 per cent.

"Other information available to the committee indicates that at unbundling the loss figures were between 22 per cent and 28 per cent.

The transmission line was expanded from 909 kilometres in 1986 to 1,500 km in 2017. Distribution lines, substations have been constructed to calibrate the power from the grid for distribution to domestic users.

The access rates vary from urban to rural areas. In the rural areas, seven per cent, up from one per cent, now access electricity.

The increased access rate is also attributed to grants development partners such as KfW, Norway, Germany and the World Bank have availed to connect poor households to power.

On collections, the rate has increased from 50 per cent in 1997 to 99.9 per cent (Umeme, 2017).

One explanation for the low collection rate during the UEB days was that most of the debtors were government ministries, departments or agencies.

The MDAs accounting officers were in a frame of mind that one government agency of department would not come down hard on another department.

What is more, the defaulters then as is the case today, were security and health institutions such as the army, police, prisons and referral hospitals.

TECHNOLOGIES

Going by a review of the number of complaints, there are fewer, say, brownouts and outages today than there were thirty years ago. Many of the power utilities have invested in newer technologies.

The sector, especially the distribution segment, has attracted a significant amount of private capital. A fresher example to illustrate this is the $170 million (Shs442 billion at 2013 exchange rates) loan Umemegot from the International Finance Corporation (IFC), a to refurbish sections of the distribution line and to roll out prepay meters.

There are concerns though that now that Umeme's concession is about to end, the company might find challenges securing loan term loans because the lenders are not certain if UEDCL will renew Umeme's lease' once it expires in 2025.